

CLAIMS

1. A microscope electronic camera provided to a microscope at least having an objective lens, an optical path split prism for splitting an optical image from the objective lens, an eyepiece lens for introducing one of optical images split by the optical path split prism, the microscope electronic camera comprising:

an imaging element for imaging the other one of the optical images split by the optical path split prism;

a signal processing section for processing an imaging signal output from the imaging element;

memory means for storing image data based on the imaging signal processed by the signal processing section;

display means located near the eyepiece lens, for displaying the image based on the imaging signal processed by the signal processing section; and

a casing integrally containing all of the imaging element, the signal processing section, the memory means, and the display means.

2. The microscope electronic camera according to claim 1, wherein the display means comprise an LCD monitor.

3. The microscope electronic camera according to claim 1, wherein the display means is arranged in the

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casing such that a display face thereof is inclined toward the eyepiece lens.

4. The microscope electronic camera according to claim 1, wherein the memory means comprise means from which a recording medium for storing the image data is attached and detached from the casing.

5. The microscope electronic camera according to claim 1, wherein the microscope includes:

a light source and an objective lens which are arranged to have a predetermined positional relationship with a specimen;

a lens barrel;

an optical path split prism located in the lens barrel, for splitting the optical image from the objective lens; and

an eyepiece lens for introducing the one of the optical images split by the optical path split prism.

6. The microscope electronic camera according to claim 1, wherein the light source comprise a transmission light source for irradiating the specimen with transmission light, and a reflection light source for irradiating the specimen with reflection light.

7. The microscope electronic camera according to claim 1, wherein a positional relationship between the eyepiece lens and the display means is set as shown below

angle  $X = 25^{\circ} - 70^{\circ}$

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$$\text{angle } Y = 20^{\circ} - 60^{\circ}$$

$$\text{angle } Z = 180^{\circ} - (X+Y)^{\circ}$$

where, in a triangle formed by connecting a first cross point at which an optical axis of the eyepiece lens crosses an axis perpendicular to a display face of the display means, a second cross point at which the display face of the display means crosses the axis, and an eyepiece point of the eyepiece lens, the angle X is formed by the optical axis of the eyepiece lens and the axis perpendicular to the display face of the display means, the angle Y is formed by the axis perpendicular to the display face of the display means and a line connecting the eyepiece point of the eyepiece lens and the second cross point in the display means, and the angle Z is formed by the optical axis of the eyepiece lens and a line connecting the eyepiece point of the eyepiece lens and the second cross point in the display means.

8. The microscope electronic camera according to claim 1, further comprising recognizing means for, when a setting of the observation condition in the microscope is changed, recognizing information the setting of which is changed, wherein the signal processing means comprise means for processing an image signal output from the imaging element in accordance with information sent from the recognizing means.

9. The microscope electronic camera according to

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claim 8, wherein the recognizing means comprise color  
temperature detection means for detecting color  
temperature of illumination irradiating the specimen,  
and the signal processing means comprise means for  
5 changing a gain of the image signal in accordance with  
the color temperature detection information detected by  
the color temperature detection means.

10. The microscope electronic camera according to  
claim 8, wherein the recognizing means comprise means  
10 for information of at least one of change of the  
observation magnification and change of the specimen,  
the signal processing means comprise means for changing  
filter coefficient suitable for accentuating a contour  
of an image of the image signal in accordance with the  
15 information obtained by the means.

11. The microscope electronic camera according to  
claim 8, wherein the recognizing means comprise means  
for obtaining information of change of an observation  
method, the signal processing means comprise means for  
20 changing a tone level of the image signal in accordance  
with the observation method change information obtained  
by the means.

12. A microscope electronic camera which is  
provided to a microscope having a function of changing  
25 a setting of the observation condition of the specimen,  
and obtains images an observation image of the specimen  
with use of the imaging element, the microscope

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electronic camera comprising:

recognizing means for, when setting of the observation condition in the microscope is changed, recognizing the information the setting of which is changed, and

signal processing means for processing an image signal output from the imaging element in accordance with information sent from the recognizing means.

13. The microscope electronic camera according to claim 12, wherein the recognizing means comprise color temperature detection means for detecting color temperature of illumination irradiating the specimen, and the signal processing means comprise means for changing gain of the image signal in accordance with the color temperature detection information detected by the color temperature detection means.

14. The microscope electronic camera according to claim 12, wherein the recognizing means comprise means for obtaining information of at least one of change of the observation magnification and change of the specimen, the signal processing means comprise means for changing filter coefficient effective for accentuating a contour of an image of the image signal in accordance with information obtained by the means.

15. The microscope electronic camera according to claim 12, wherein the recognizing means comprise means for obtaining observation method change information,

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the signal processing means comprise means for changing  
a tone level of the image signal in accordance with the  
observation method change information obtained by the  
means.

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